PB-229 854

WATER POLLUTION CONTROL RESEARCH AND TRAINING GRANTS. LIST OF 1964 AWARDS: RESEARCH GRANTS, RESEARCH FELLOWSHIPS, TRAINING GRANTS, DEMONSTRATION GRANTS

Public Health Service
Washington, D. C.

1964

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Water Pollution Control Research and Training Grants

List of 1964 Awards

RESEARCH GRANTS
RESEARCH FELLOWSHIPS
TRAINING GRANTS
DEMONSTRATION GRANTS

Grants - in - Aid

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

Water Pollution Control Research and Training Grants

List of 1964 Awards

RESEARCH GRANTS
RESEARCH FELLOWSHIPS
TRAINING GRANTS
DEMONSTRATION GRANTS

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Division of Water Supply and Pollution Control
Washington, D. C. 20201

899

Public Health Service Publication No. 1100

1964 Edition

FOREWORD

The Federal Water Pollution Control Act authorizes the award of grants-in-aid for research, training, and demonstration projects, and for research fellowships.

The purposes of these grants are to encourage, cooperate with, and assist appropriate authorities, agencies, institutions, and individuals in the conduct of studies and training relating to the causes, control and prevention of water pollution.

Support is available for projects and fellowships designed to improve the sanitary condition of water, to conserve water for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, agricultural, industrial and for other legitimate uses. Four types of grants are available.

Research Grants are awarded to individuals for the conduct of basic and applied research projects in water supply and pollution control. The purposes are to expand such research activities throughout the country, and to encourage investigators to undertake research in neglected areas.

Research Fellowships are awarded to individuals for the support of specialized research training in the institution of their choice. The purpose is to increase the number of scientists qualified to carry on independent research in water supply and pollution control.

Training Grants are awarded to institutions to establish or expand training in water supply and pollution control. The grants provide funds to support training programs in a variety of departments, including expansion and improvement of faculties, and payment of stipends to graduate students participating in the training program.

Demonstration Grants are awarded to public and private institutions and agencies to support investigations and studies of an applied nature, and to demonstrate the feasibility of new methods. These grants are designed to evaluate the application of research findings, and to expedite incorporation of new knowledge into routine water supply and pollution control practice.

Application: To obtain details concerning the various awards and to request forms for the submission of applications, write to:

Research and Training Grants Branch
Division of Water Supply and Pollution Control
Public Health Service
Washington, D. C. 20201

WATER POLLUTION CONTROL

RESEARCH AND TRAINING GRANTS

LIST OF 1964 AWARDS

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WATER POLLUTION CONTROL

RESEARCH AND TRAINING GRANT PROGRAM

SUMMARY OF AWARDS

FISCAL YEAR 1964

Grants	Number States	Number Institutions	Grants Awarded	Amounts Awarded
Research Grants	42	97	203	$4,260,505
Research Fellowships	24	38	75	472,096
Training Grants	30	39	54	2,016,290
Demonstration Grants	13	20	19	645,803
ALL GRANTS	45	124	351	$7,394,694

NOTE:

Grants Awarded. Some grants awarded in a fiscal year have beginning dates in the following fiscal year.

Amounts Awarded. The amounts awarded differ from payments ultimately made on grants because of continuing changes in the expenditures, grant periods, indirect costs, and other items.

WATER POLLUTION CONTROL

RESEARCH GRANTS FISCAL YEAR 1964

SUMMARY OF GRANTS BY STATES

States	Institutions Total*	Awarded 1964	Amount 1964
Alabama	2	1	23,736
Alaska	1	1	31,073
Arizona	2	2	31,900
Arkansas	1	2	33,488
California	11	17	383,531
Colorado	2	3	76,951
Connecticut	1	1	15,457
District of Columbia	3	2	67,080
Florida	4	10	290,572
Georgia	1	2	29,044
Illinois	3	14	241,348
Indiana	1		
Iowa	2	4	75,916
Kansas	4	6	80,114
Kentucky	2	1	24,130
Louisiana	2	2	20,269
Maine	1	2	33,372
Maryland	2	5	100,570
Massachusetts	5	11	295,817
Michigan	2	7	512,352
Minnesota	1	2	64,993
Missouri	2	4	97,894
Montana	1	2	39,977
New Hampshire	1	1	30,564
New Jersey	2	8	79,080
New Mexico	1	1	18,189
New York	10	17	311,911
North Carolina	3	5	71,123
North Dakota	2	1	15,204
Ohio	3	7	76,935
Oklahoma	2	3	65,807
Oregon	2	15	250,526
Pennsylvania	8	7	94,848
Rhode Island	1	2	74,030
South Carolina	2	2	61,948
South Dakota	1	1	14,716
Tennessee	1	2	29,885
Texas	4	6	99,771
Utah	2	3	33,377
Virginia	2	2	29,382
Washington	2	8	164,774
West Virginia	1	1	8,040
Wisconsin	1	6	112,966
Foreign	4	4	47,845

*Total includes all active Research Grants, both 1963 and 1964 awards.

Active Research Grants 1964

43 States, 4 Foreign Countries
111 Institutions and Agencies
253 Research Grants Active

Research Grants Awarded 1964

42 States, 4 Foreign Countries
97 Institutions and Agencies
203 Research Grants Awarded
$4,260,505 Amount Awarded

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WATER POLLUTION CONTROL

RESEARCH GRANTS

FISCAL YEAR 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
ALABAMA			
Auburn University, Auburn			
Funderburk, H. H., Jr., Ph.D. Dept. of Botany and Plant Pathology	Effect of Herbicides on an Aquatic Environment	WP-00636-01	$23,736
University of Alabama University			
Walters, James V., Ph.D. Dept. of Civil Engineering	Nematodes in Sewage and Sewage Treatment Facilities	WP-00055-01	_____*
ALASKA			
University of Alaska, College			
Dugdale, Richard C., Ph.D. Institute of Marine Science	Dynamics of the Nitrogen Cycle in Lakes	WP-00422-02	31,073
ARIZONA			
Arizona State University, Tempe			
Klock, John W., Ph.D. Dept. of Civil Engineering	Engineering Bioassay Development	WP-00241-03	_____*
University of Arizona, Tucson			
Bier, Milan, Ph.D. Dept. of Agricultural Biochemistry	Isolation of Water-Borne Bacteriophages by Electrophoresis	WP-00516-02	18,170
McIntosh, Thomas H., Ph.D. Dept. of Agricultural Chemistry and Soils	Biological Effect of Waste Waters on Soil Surfaces	WP-00672-01	13,730
ARKANSAS			
University of Arkansas Fayetteville			
Testerman, M. K., Ph.D. Dept. of Electronics and Instrumentation	A Continuous Multiparameter Water Quality Monitor	WP-00044-03	17,850
Ward, John C., Ph.D. Dept. of Civil Engineering	Turbulent Flow in Porous Media	WP-00528-02	15,638

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
CALIFORNIA			
California Institute of Technology, Pasadena			
Brooks, Norman H., Ph.D. Div. of Engineering & Applied Science	Dynamics of Density-Stratified Ground-Water Flow	WP-00680-01	$19,564
Samples, William R., Ph.D. Environmental Health Eng.	Sewage Reclamation by Pressurized Recharge of Aquifers	WP-00227-03	_____*
Vanoni, Vito A., Ph.D. Div. of Engr. & Applied Sci.	Dynamics of Density-Stratified Reservoirs	WP-00428-02	29,340
Humboldt State College, Arcata			
DeWitt, John W. Dept. of Fisheries	Improvement of Oxidation Pond Effluents by Organisms	WP-00020-04	_____*
Long Beach State College, Long Beach			
Reish, Donald J., Ph.D. Dept. of Biology	Studies on Indicator Species of Marine Pollution	WP-00531-01A1	13,980
Los Angeles State College, Los Angeles			
Anderson, Dean A., Ph.D. Dept. of Microbiology & Public Health	Bacteria Utilizing Surfactants as Sole Carbon Source	WP-00327-02	_____*
San Francisco State College, San Francisco			
Mackey, James P., Ph.D. Dept. of Biology	The Ecology of a Tidal Marsh Stream in California	WP-00644-01	4,877
Sewage Treatment Laboratory, Concord			
Aitken, Thomas W., A. B. Sewage Treatment Laboratory	The Systematic Phycology of an Oxidation Pond	WP-00638-01	1,925
Stanford University, Stanford			
Franzini, Joseph B., Ph.D. Dept. of Civil Engineering	Investigation of Infiltration Phenomena	WP-00246-03	21,216
Franzini, Joseph B., Ph.D. Dept. of Civil Engineering	Evaporation Suppression and Its Effect on Biota	WP-160-04	_____*
McCarty, Perry L., Sc.D. Dept. of Civil Engineering	Anaerobic Waste Treatment Kinetics	WP-00584-01	22,330

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
CALIFORNIA (Cont'd.)			
Stanford University, Stanford			
McCarty, Perry L., Sc.D. Dept. of Civil Engineering	Ion Effects in Anaerobic Digestion	WP-482-02	_____*
McCarty, Perry L., Sc.D. Dept. of Civil Engineering	Nutrient Requirements in Anaerobic Digestion	WP-483-01	_____*
University of California, Berkeley			
Cooper, Robert C., Ph.D. Engineering Research Lab.	Treatment of Organic Industrial Wastes by Lagooning	WP-00231-03	_____*
Johnson, Joe W., M. S. Dept. of Civil Engineering	Oceanographic Factors in the Design of Ocean Outfall Sewers	WP-00156-05	_____*
Kaufman, Warren J., Sc.D. Institute of Engr. Research	Partial Demineralization of Saline Sewage by Ion Exchange	WP-00544-02	$24,600
Kaufman, Warren J., Sc.D. Institute of Engr. Research	Orthokinetic Flocculation of Heterodispersed Systems	WP-00658-01	18,279
McGauhey, Percy H., M. S. Institute of Engr. Research	Travel of Synthetic Detergents With Percolating Water	WP-00207-04	37,620
McGauhey, Percy H., M. S. Institute of Engr. Research	Application of Foam Fractionation to Sewage	WP-00396-02	18,960
McGauhey, Percy H., M. S. Institute of Engr. Research	Economic Evaluation of Water Quality	WP-00597-01	16,200
Oswald, William J., Ph.D. Institute of Engr. Research	Nutritive and Disease Transmitting Potential of Sewage Grown Algae	WP-00026-03 WP-00026-03S1	25,042 12,480
Pearson, Erman, Sc.D. Engineering Materials Lab.	Reaction Kinetics of Anaerobic Fermentation Systems	WP-00230-03	_____*
University of California Davis			
Biggar, J. W., Ph.D. Dept. of Irrigation	Soil Interaction With Organically Polluted Water	WP-00081-03	16,685
University of California, Riverside			
Bradford, Gordon R., M. S. Dept. of Soil Plant Nutrition	Effect of Trace Elements on Reuse of Water	WP-00484-01	71,484

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
CALIFORNIA (Cont'd.)			
University of Southern California, Los Angeles			
Bandy, Orville L., Ph.D. Dept. of Geology	Benthonic Foraminifera Relationship to Ocean Pollution	WP-00158-05A1	$23,526
Lazaroff, Norman, Ph.D. Dept. of Biology	Anionic Adaptation of Thiobacillus Ferroxidans	WP-00551-01	5,423
Mohr, John L., Ph.D. Allan Hancock Foundation	The Influence of Pollution on Marine Invertebrates	WP-00463-01	_____*
COLORADO			
Colorado State University, Fort Collins			
Corey, Arthur T., Ph.D. Dept. of Agricultural Engr.	Transport of Particles Through Unsaturated Soils	WP-00349-02	12,515
Morrison, S. M., Ph.D. Dept. of Pathology and Microbiology	Watershed Environment and Microbial Dynamics	WP-00679-01	28,756
Yevdjevich, Vujica M., Ph.D. Dept. of Civil Engineering	Unsteady Flow in Storm Drains	WP-00115-03	35,680
University of Colorado Medical School, Denver			
Dunlop, Stuart G., Ph.D. Dept. of Microbiology	Enteric Pathogens and Viruses in Irrigation Water	WP-119-10	_____*
CONNECTICUT			
University of Connecticut, Storrs			
Collins, Ralph P., Ph.D. Dept. of Botany and Institute of Cellular Biology	A Study of Microorganisms Inducing Tastes and Odors in Water	WP-00005-03	15,457
DISTRICT OF COLUMBIA			
National Academy of Sciences, Washington			
Smith, Waldo E. American Geophysical Union	XIIIth General Assembly of the IUGG	WP-00503-01 WP-00503-01S1	_____* 10,000

*Active 1964 - Supported by funds awarded 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
DISTRICT OF COLUMBIA (Cont'd.)			
Levine, Benjamin S., Ph.D. Individual	U. S. S. R. Literature on Water Supply and Pollution Control	WP-00305-05	$14,830
Water Pollution Control Federation, Washington			
Fuhrman, Ralph E., Ph.D. Executive Secretary	2nd International Conference on Water Pollution Research	WP-00583-01	42,250
FLORIDA			
Florida State Board of Health, Jacksonville			
Yount, James I., Ph.D. Midge Research Laboratory	Causes and Relief of Hypereutrophication of Lakes	WP-00216-04	37,750
Florida State University Talahassee			
Godfrey, R. K., Ph.D. Dept. of Biological Sciences	Marsh Plants of the Florida Area as Related to Water Pollution	WP-00767-06	18,144
University of Florida, Gainesville			
Berner, Lewis, Ph.D. Dept. of Biology	Immature Insects of Southeastern River Beds	WP-00372-02	12,031
Black, Alvin P., Ph.D. Dept. of Chemistry	A Comprehensive Study of Water Coagulation	WP-00139-09	21,960
Bruun, Per M., Ph.D. Coastal Engr. Laboratory	Fluorescent Tracing of Sediment in Coastal Areas	WP-00057-03	32,228
Calaway, Wilson T., M. S. Dept. of Entomology	Nematodes in Sewage Treatment and Their Significance	WP-00508-02	21,730
Lackey, James B., Ph.D. Dept. of Civil Engineering	The Sulfur Relationships of Microorganisms	WP-00224-03	_____*
Nordlie, Frank G., Ph.D. Dept. of Biology	Chemical and Biological Dynamics in Two Solution Lakes	WP-00530-01	19,212
Smith, Paul H., Ph.D. Dept. of Bacteriology	Studies on the Methanogenic Bacteria in Sludge	WP-00198-05	24,357
University of Miami, Coral Gables			
Fogarty, William J. Dept. of Civil Engineering	Frozen Storage and Effects on BOD Test Results	WP-00389-01	_____*

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
FLORIDA (Cont'd.)			
University of Miami, Coral Gables			
Idyll, C. P., Ph.D. Institute of Marine Science	Estuarine Ecological Study in Relation to Water Use	WP-00400-01	$79,825
Moore, Hilary B., Ph.D. Institute of Marine Science	The Biology of the Infauna of a Tropical Soft Bottom Area	WP-00573-01	23,335
GEORGIA			
Georgia Institute of Technology, Atlanta			
Ingols, Robert S., Ph.D. School of Applied Biology and Nuclear Sciences Division	Biodegradation of Halogenated Phenolics	WP-00188-04	14,112
O'Melia, Charles R., M. S. School of Civil Engineering	The Role of Zeta Potential in Sand Filtration	WP-00382-02	14,932
ILLINOIS			
Illinois Institute of Technology, Chicago			
Grieves, Robert B., Ph.D. Dept. of Civil Engineering	The Foam Fractionation of Petrochemical Waste Waters	WP-00643-01	16,043
Kintner, Robert C., Ph.D. Chemical Engineering Dept.	Coalescence of Drops in a Liquid Field	WP-00366-02	7,824
Northwestern University Evanston			
Charnes, Abraham Dept. of Engineering Sciences	Systems Analysis of Municipal Sewage Treatment	WP-00019-05	22,560
University of Illinois, Urbana			
Engelbrecht, Richard S., Sc.D. Dept. of Civil Engineering	Fundamental Factors in Treatment of Iron-Bearing Waters	WP-00017-06	19,954
Engelbrecht, Richard S., Sc.D. Dept. of Civil Engineering	Factors Influencing Free-Living Nematodes in Water Supplies	WP-00047-03	20,588
Engelbrecht, Richard S., Sc.D. Dept. of Civil Engineering	Contact Removal of Organic Matter by Microorganisms	WP-00640-01	30,067
Ewing, Ben B., Ph.D. Dept. of Civil Engineering	Fate of Synthetic Detergents in Soil and Ground Water	WP-00018-05	19,218

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
ILLINOIS (Cont'd.)			
University of Illinois, Urbana			
Grim, Ralph E., Ph.D. Dept. of Geology	Atomic Structural Control of Selective Adsorption	WP-00399-02	15,616
Harmeson, Robert H., M. S. Illinois State Water Survey	Effect of Coarse Filter Media on Artificial Recharge	WP-00447-02	10,551
Larson, Thurston E., Ph.D. Illinois State Water Survey	Determination of Total Organic Carbon in Water	WP-00093-02	_____*
Larson, Thurston E., Ph.D. Illinois State Water Survey	Corrosion and Tuberculation in Distribution Systems	WP-00132-08	_____*
Larson, Thurston E., Ph.D. Illinois State Water Survey	Chromatographic Analysis for Organic Acids in Water	WP-00270-05	16,898
McPherson, Murray B., M. S. Dept. of Civil Engineering	Criteria for Analysis of Water Distribution Systems	WP-00526-01	18,300
Quinn, John A., Ph.D. Chemistry and Chemical Engineering Dept.	Mass Transfer Through Interfaces	WP-00601-01	15,735
Speece, Richard E., Ph.D. Dept. of Civil Engineering	Controlling Factors in Methane Fermentation	WP-00394-02	17,836
Wolfe, R. S., Ph.D. Dept. of Microbiology	Microbiology of the Dilute Enrichment	WP-00016-06	10,158
INDIANA			
Purdue Research Foundation, Lafayette			
Bloodgood, Don E., M.C.E. Dept. of Civil Engineering	Sludge Concentration by Pressure Wave Irradiation	WP-00232-02	_____*
IOWA			
Iowa State University, Ames			
Dodd, John D., Ph.D. Dept. of Botany and Plant Pathology	Ecology of Diatoms in Hardwater Habitats	WP-00221-04 WP-00221-04S1	7,980 1,800
Kirkham, Don, Ph.D. Dept. of Agronomy	Movement of Water from Waste Recharge Installations	WP-00070-03	18,783
Morgan, Paul E., M.S. Dept. of Civil Engineering	Design Requirement for Municipal Diatomite Filters	WP-00196-04	24,456

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
IOWA (Cont'd.)			
State Univ. of Iowa, Iowa City			
Morris, Robert L., Ph.D. State Hygienic Laboratory	Effect of Surface Water Actinomycetes on BOD vs COD	WP-00378-02	$22,897
KANSAS			
Center for Research, Inc., University of Kansas, Lawrence			
Pfeffer, John T., Ph.D. Dept. of Civil Engineering	Trace Element Needs of Filamentous Microorganisms	WP-00646-01	15,640
Kansas State Teachers College Emporia			
Prophet, Carl W., Ph.D. Dept. of Biology	Limnology of the John Redmond Reservoir, Kansas	WP-00615-01	11,982
Kansas State University Manhattan			
Lambert, Jack L., Ph.D. Dept. of Chemistry	Determination of Ammonia	WP-00235-03	7,313
Lambert, Jack L., Ph.D. Dept. of Chemistry	Ligand Exchange Reagents	WP-00326-03	8,214
Univ. of Kansas, Lawrence			
Loehr, Raymond C., Ph.D. Dept. of Civil Engineering	Aerobic Microbial Degradation of Lipids	WP-00341-02 WP-00341-02S1	16,380 4,655
McKinney, Ross E., Sc.D. Dept. of Civil Engineering	Complete Mixing Activated Sludge	WP-00248-03	15,930
KENTUCKY			
University of Kentucky, Lexington Kentucky Research Foundation			
Lauderdale, Robert A., Ph.D. Dept. of Civil Engineering	Removal of Pesticides from the Environment	WP-00467-01	24,130
University of Louisville Louisville			
Jackson, Daniel F. Potamological Institute	Ecology of Phytoplankton Blooms	WP-00068-03	_____*

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
LOUISIANA			
Louisiana State Univ., Baton Rouge			
Colmer, Arthur R., Ph.D. Dept. of Bacteriology	Autotrophic Iron Oxidizers from Acid Waste Waters	WP-00549-02	$ 7,776
Tulane University, New Orleans			
Suttkus, R. D., Ph.D. Dept. of Zoology	Pearl River Fishes-Index Pre-Pollution Surveys	WP-00082-05	12,493
MAINE			
University of Maine, Orono			
Sproul, Otis J., Sc. D. Dept. of Civil Engineering	Effects of Chemical Ions on Inactivation	WP-00387-01A1	17,448
Zieminski, Stefan A., Sc.D. Dept. of Chemical Engineering	Use of Chemical Additives to Improve Aeration Rates	WP-00562-01A1	15,924
MARYLAND			
The Johns Hopkins University Baltimore			
Carpenter, James H., Ph.D. Dept. of Oceanography	Solubility of Oxygen in Pure and Natural Waters	WP-00169-04	_____*
Geyer, John C., Ph.D. Dept. of Sanitary Engineering	Low-Flow Augmentation for Stream Pollution Abatement	WP-00153-06	_____*
Geyer, John C., Ph.D. Dept. of Sanitary Engineering	Ground Water Storage Project	WP-00444-02	24,920
Shapiro, Joseph, Ph.D. Dept. of Sanitary Engineering	Reducing Secondary Effluent Phosphorus Concentration	WP-00099-03	20,800
Shapiro, Joseph, Ph.D. Dept. of Sanitary Engineering	Inorganic-Organic Interactions in Natural Waters	WP-00199-05	31,922
University of Maryland, College Park			
Marchello, Joseph M., Ph.D. Dept. of Chemical Engineering	Influence of Small Surface Waves on Mass Transfer	WP-00323-03	12,751
Stross, Raymond G., Ph.D. Dept. of Zoology	Control of Nuisance Algae in Lakes	WP-00101-02	10,177

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
MASSACHUSETTS			
Boston University, Boston			
Jones, Galen E., Ph.D. Dept. of Biology	Effect of Organic Substances from Sea on Bacteria	WP-00650-01	$34,777
Harvard University, Cambridge			
Fair, Gordon M., Ph.D. Dept. of Water Resources and Sanitary Engineering	Internal Hydraulic Work in Flocculation	WP-00024-04	32,304
Fair, Gordon M., Sc.D. Div. of Environmental Sciences and Engineering	Inhibition and Repression in Substrate Utilization	WP-00621-01	16,938
Morris, J. Carrell, Ph.D. Dept. of Eng. & Applied Physics	Reactions of Dilute Aqueous Chlorine with Sulfamate	WP-00073-02	——*
Stumm, Werner, Ph.D. Dept. of Water Resources and Sanitary Engineering	Oxygenation Rate of Ferrous Iron in Natural Waters	WP-00013-05	18,030
Stumm, Werner, Ph.D. Dept. of Water Resources and Sanitary Engineering	Modes of Corrosion Inhibition in Natural Waters	WP-00043-03	15,515
Stumm, Werner, Ph.D. Division of Engineering and Applied Physics	Chemical Aspects of Coagulation	WP-00098-03	14,760
Thomas, Harold A., Jr., S. D. Dept. of Environmental Eng.	Operations Research in Water Quality Management	WP-00111-02	99,123
Massachusetts Health Res. Inst. Inc., Boston			
Delaney, John E., M. S. Dept. of Bacteriology	Methods for Measuring the Coliform Content of Water	WP-00202-04	16,128
Massachusetts Institute of Technology, Cambridge			
Harleman, Donald R. F., Sc.D. Dept. of Civil Engineering	Waste Water Recharge and Dispersion in Porous Media	WP-00347-02	18,654
Harleman, Donald R. F., Sc.D. Dept. of Civil Engineering	Mechanics of Aeration and Dispersion in River Pollution	WP-00071-03	17,138
University of Massachusetts, Amherst			
Carver, Charles E., Jr., Sc.D. Dept. of Civil Engineering	Efficiency of Oxygen Transfer in Spray Aeration	WP-00450-01	12,450

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
MICHIGAN			
Michigan State University, East Lansing			
Ball, Robert C., Ph. D. Dept. of Fisheries & Wildlife	A Study of Fundamental Productivity in a Stream	WP-00011-06	_____*
Ball, Robert C., Ph.D. Dept. of Fisheries & Wildlife	Serum Stress Patterns as Related to Stream Ecology	WP-00369-02	$14,345
University of Michigan Ann Arbor			
Ayers, John C., Ph.D. Great Lakes Research Division	Ecology-Water Quality Changes in Lakes Michigan, Erie	WP-00226-04	59,839
Ayres, John C., Ph.D. Great Lakes Research Division	A Coherent-Area Study of Southern Lake Michigan	WP-00311-01A1	289,200
Borchardt, Jack A., Ph.D. Dept. of Civil Engineering	The Use of Algae in the Treatment of Sewage Effluents	WP-00155-06	_____*
Borchardt, Jack A., Ph.D. Dept. of Civil Engineering	Sand Filtration of Discrete Suspensions	WP-00329-02	13,133
Borchardt, Jack A., Ph.D. Dept. of Civil Engineering	Organic Decomposition at Poised O-R Potential Levels	WP-00333-02	19,200
Gannon, John J., Ph.D. Dept. of Environmental Health	Investigation of River BOD Abnormalities	WP-00187-03	_____*
Velz, Clarence J., Dept. of Environmental Health	Biological Extraction and Accumulation in Streams	WP-00091-03	76,147
Velz, Clarence J., Dept. of Environmental Health	Investigation of Pumped Storage for Flow Augmentation	WP-00689-01	40,488
MINNESOTA			
University of Minnesota Minneapolis			
Olson, Theodore A., Ph.D. School of Public Health	Benthonic Invertebrates as an Index of Water Quality	WP-00320-02	22,265
Schroepfer, George J. Dept. of Civil Engineering	Factors Affecting Thickening in Liquid Solids Separation	WP-00205-03	_____*
Smith, Lloyd L., Jr., Ph.D. Dept. of Entomology, Wildlife and Fisheries	Effect of Paper Fiber Waste on Fish Eggs and Juveniles	WP-00223-04	42,728

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
MISSOURI			
University of Missouri, Columbia			
Campbell, Robert S., Ph.D. Dept. of Zoology	Recovery from Acid Pollution in Four Strip-mine Lakes	WP-00379-02	$14,848
Jeffrey, Edgar Allen, Ph.D. Dept. of Civil Engineering	Design Criteria for Livestock Waste Lagoons	WP-00032-02	_____*
Smith, George E., Ph.D. Dept. of Soils	Nitrates in Water Supplies	WP-00533-01	18,216
Washington University, St. Louis			
Skrinde, Rolf T., Ph.D. Dept. of Environ. & San. Eng.	Chemical Oxidation of Trace Organics in Water	WP-00346-02	37,588
Skrinde, Rolf T., Ph.D. Dept. of Environ. & San. Eng.	Detection and Removal of Organic Pesticides in Water	WP-00433-02	27,242
MONTANA			
Montana State College, Bozeman			
Berg, Lloyd, Ph.D. Chemical Engineering Dept.	Terpenes from Sulfate Pulp Mill Waste Liquor	WP-00510-02	9,545
Wright, John C., Ph.D. Dept. of Botany and Bacteriol.	Hydrobiology of the Madison River and Its Headwaters	WP-00125-02	30,432
NEW HAMPSHIRE			
University of New Hampshire, Durham			
Slanetz, Lawrence W., Ph.D. Dept. of Microbiology	Enteric Bacteria and Viruses in Sewage, Water and Shellfish	WP-00009-08	30,564
NEW JERSEY			
Newark College of Eng., Newark			
Metzger, Ivan Dept. of Civil Engineering	Equalization of Liquid Wastes	WP-00041-02	_____*
Rutgers, The State University, New Brunswick			
Dondero, Norman C. Dept. of Sanitation	Continuous Flow and Batch Cultures of Sphaerotilus	WP-00212-04	21,507

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
NEW JERSEY (Cont'd.)			
Rugers, The State University New Brunswick			
Dondero, Norman C., Ph.D. Dept. of Sanitation	Adaptation by Microbial Populations	WP-00645-01	$18,527
Faust, Samuel D., Ph.D. Dept. of Sanitation	Organic Pesticides and Herbicides from Water	WP-00206-04	8,880
Faust, Samuel D., Ph.D. Dept. of Sanitation	Determination of Phenols in Water and Wastewater	WP-00365-02	7,560
Heukelekian, Hovhaness, Ph.D. Dept. of Sanitation	Microbiology of Polluted and Unpolluted Waters	WP-00078-01	_____*
Heukelekian, Hovhaness, Ph.D. Dept. of Sanitation	Effect of Composition of Waste Water on Activated Sludge Characteristics	WP-00133-08	5,664
Heukelekian, Hovhaness, Ph.D. Dept. of Sanitation	Biochemical Oxygen Demand of Pure Organic Compounds	WP-00136-07	_____*
Lechevalier, Hubert A., Ph.D. Institute of Microbiology	Odor Producing Substances of Actinomycetes	WP-00515-02	7,324
Starkey, Robert L., Ph.D. Dept. of Agric. Microbiology	Microbial Transformations of Organic Sulfur Compounds	WP-00006-03	4,980
Trama, Francesco B., Ph.D. Dept. of Zoology	A Pre- and Post-Impoundment Study on the Raritan River, New Jersey	WP-00059-03	4,638
NEW MEXICO			
Eastern New Mexico University, Portales			
Sublette, James E., Ph.D. Dept. of Biological Science	Cytotaxonomy and Related Studies of Holarctic Midges	WP-00468-01	18,189
NEW YORK			
City College Research Foundation New York			
Haines, Thomas H., M. S. Dept. of Chemistry	Structure and Function of a New Sulfolipid	WP-00675-01	13,212
Columbia University, New York			
Gumbel, Emil J., Ph.D. Dept. of Industrial & Management Engineering	Statistical Theory of Extreme Values and Their Applications in Hydrology	WP-00457-02	15,972

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
NEW YORK (Cont'd.)			
Columbia University, New York			
La Mer, Victor K., Ph.D. Dept. of Chemical Engineering	Tests of Filtration Theory to Water Coagulation	WP-00240-03 WP-00240-03S1	$28,210 5,500
Cornell University, Ithaca			
Barlow, John P., Ph.D. Dept. of Conservation	Oxygen Resources of Tidal Waters	WP-00176-06	22,770
Behn, Vaughn C., Dr. Eng. Dept. of Sanitary Engineering	Mass Transfer into Non-Newtonian Systems	WP-00229-04	17,521
Behn, Vaughn C., Dr. Eng. Dept. of Sanitary Engineering	Analysis of Trickling Filter-Experimental Model	WP-00234-03	11,154
Liggett, James A., Ph.D. Hydraulics & Hydraulic Eng. Dept.	Settling Velocities of Suspended Solids in a Turbulent Environment	WP-00605-01	19,080
Manhattan College, New York			
Jeris, John S., Sc. D. Civil Engineering Dept.	The Biochemistry of Anaerobic Digestion	WP-00577-01	22,337
O'Connor, Donald, Ph.D. Dept. of Civil Engineering	Effect of Physical and Chemical Variables on Reaeration	WP-00142-05	_____*
O'Connor, Donald J., Sc. D. Civil Engineering Dept.	Estuarine Water Quality and Pollution	WP-00677-01	18,000
New York University, New York			
Edwards, Gail P., Ph.D. Sanitary Engineering Lab.	A Critical Study of Analytical Methods for Sea Water	WP-00339-02S1 WP-00339-03	8,506 17,448
Kugelman, Irwin J., Sc. D. Dept. of Civil Engineering	Cation Effects in Anaerobic Waste Treatment	WP-00690-01	14,691
Mehr, Emanuel, M. A. Data Processing & Computation Lab.	Computer Interpretation of Dye Dump Studies	WP-00507-01	_____*
Mehr, Emanuel, M. A. Data Processing & Computation Lab.	Computer Interpretation of Dye Dump Studies	WP-00662-01	10,040
Polytechnic Institute of Brooklyn, Brooklyn			
Bruins, Paul F., Ph.D. Chemical Engineering Dept.	Advance Waste Treatment by Ultrafiltration	WP-00620-01	36,294

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
NEW YORK (Cont'd.)			
Renesslaer Polytechnic Inst. Troy			
Washington, Donald R., Ph.D. Dept. of Civil Engineering	Effect of Loading on Assimilation in Activated Sludge	WP-00228-03	_____*
Syracuse University Res. Corp. Syracuse			
Lazaroff, Norman, Ph.D. Microbiological Biochem. Cen.	Anionic Adaptation ofq Thiobacillus Ferroxidans	WP-00769-01	$ 2,185
Syracuse University Res. Inst. Syracuse			
Lundgren, Donald George, Ph.D. Dept. of Bacteriology & Botany	Physiology and Culture of Iron-Oxidizing Bacteria	WP-00548-02	14,417
Rand, M. C., Ph.D. Dept. of Civil Engineering	Kinetics of Oxidation of Sulfites by Dissolved Oxygen	WP-00074-02	15,494
Syracuse University, Syracuse			
Li, Wen-Hsiung, Ph.D. Civil Engineering Dept.	Transverse Dispersion of Contaminant in Ground Water	WP-00575-01	19,080
NORTH CAROLINA			
Duke University, Durham			
Bryan, Edward Henry, Ph.D. Dept. of Civil Engineering	Biochemical Utilization of Chemically Combined Oxygen	WP-00316-03	13,340
North Carolina State College Raleigh			
Hayne, Don W., Ph.D. Institute of Statistics	Biometrics of the Study of a Small River	WP-00502-02	6,956
University of North Carolina Chapel Hill			
Lamb, James C. III, Sc.D. Dept. of Environmental Science and Engineering	Design Criteria for Final Tanks and Sludge Thickeners	WP-00569-01	22,035
Weiss, Charles M., Ph.D. Dept. of Sanitary Engineering	Use of Fish to Detect Organic Insecticides in Water	WP-00010-07	_____*
Weiss, Charles M., Ph.D. Dept. of Sanitary Engineering	Direct Gas Chromatography of Organics in Water	WP-00563-01	14,272
Wicker, Warren Jake, M. A. Institute of Government	Arrangements for Water Sources in Selected North Carolina Areas	WP-00352-03 WP-00352-03S1	6,000 8,520

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
NORTH DAKOTA			
North Dakota State Dept. of Health Grand Forks			
Gustafson, Arthur A., B. S. Public Health Laboratory	A Study of the Bacterial and Viral Flora of Sewage Lagoons (Oxidation Ponds)	WP-00058-03	$15,204
University of North Dakota Grand Forks			
Cooley, Albert M., M. S. Dept. of Chemical and Civil Engineering	Treatability of Potato Wastes	WP-00237-03	_____*
OHIO			
Kenyon College, Gambier			
Pappenhagen, James M., Ph.D. Dept. of Chemistry	Determination of Ions in Wastes and Waters	WP-00137-09 WP-00137-09S1	3,840 3,360
The Ohio State Univ. Res. Fdn. Columbus			
Randles, Chester I., Ph.D. Dept. of Microbiology	Aquatic Bacteria Related to Acid-Mine Drainage	WP-00147-09	9,009
Smith, Edwin Earle, Ph.D. Dept. of Chemical Engineering	Study of the Sulfide-To-Sulfate Reaction Mechanism	WP-00340-03	19,780
Taft, Clarence E., Ph.D. Dept. of Botany & Plant Path.	The Diatoms of the West End of Lake Erie	WP-00317-03	9,540
University of Cincinnati, Cincinnati			
Eye, John D., M. S. Dept. of Sanitary Engineering	Trickling Filter Effluent Quality Control by. O.R.P.	WP-00065-03	6,782
Lemlich, Robert, Ph.D. Dept. of Chemical Engineering	Foam Fractionation with Reflux	WP-00161-05	9,840
Mancy, Khalil H., Ph.D. College of Engineering	D. O. Determination in Natural Waters and Wastes	WP-00566-01	14,784
OKLAHOMA			
Oklahoma State University, Stillwater			
Gaudy, Anthony F., Jr., Ph.D. School of Civil Engineering	Kinetics and Mechanism in Activated Sludge Processes	WP-00325-02	21,206
Gaudy, Anthony F., Jr., Ph.D. School of Civil Engineering	Response of Activated Sludge to Organic Shock Loads	WP-00075-03	26,540

*Active 1964 - Supported by funds awarded in 1963

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
OKLAHOMA (Cont'd.)			
University of Oklahoma Research Institute, Norman			
Klehr, Edwin H., Ph.D. Dept. of Sanitary Science and Public Health	Mixed Resin Sampler Kit for Analysis of Polluted Water	WP-00373-01	$18,061
OREGON			
Oregon State University, Corvallis			
Behlke, Charles E., Ph.D. Dept. of Civil Engineering	Comprehensive Study of Ocean Outfall Diffusers	WP-00046-02	_____*
Bond, Carl E., M. S. Dept. of Fish & Game Management	Relations of Nuisance Algae to Fishes in Klamath Lake	WP-00625-01	17,336
Burgess, Fred J., Prof. Dept. of Civil Engineering	Chemical-Physical Aspects of Deep Trickling Filters	WP-00171-05	_____*
Burgess, Fred J., M. S. Dept. of Civil Engineering	Waste Water Lagoon Criteria for Maritime Climates	WP-00185-05	13,675
Burgess, Fred J., M. S. Dept. of Civil Engineering	Pulp Mill Waste Degradation in Marine Water	WP-00524-01	27,448
Castle, Emery N., Ph.D. Dept. of Agricultural Economics	An Economic Evaluation of Water Pollution Control	WP-00107-02	32,401
Freed, Virgil H., Ph.D. Agricultural Chemistry Dept.	Chemical Brush Control: Biochemistry and Toxic Hazard	WP-00477-02	26,072
Hall, James Dane, Ph.D. Dept. of Fish and Game Management	Studies on Effects of Watershed Practices on Streams	WP-00423-02	21,685
Harward, Moyle E., Ph.D. Dept. of Soils	Location of Charge and Chemical Properties of Clay	WP-00097-03	16,053
Marvell, Elliot N., Ph.D. Dept. of Chemistry	Components of Kraft Mill Wastes and Their Toxicities	WP-00079-07	9,456
Morita, Richard Y., Ph.D. Dept. of Microbiology	Study of Beggiatoa Species	WP-00443-03	6,960
Pritchard, Austin W., Ph.D. Dept. of Zoology	Acclimation of Fish to Pollution-Related Low Oxygen	WP-00493-01	7,838
Seaders, John, M. S. Dept. of Civil Engineering	Factors Influencing Stream Temperatures	WP-00684-01	17,785

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
OREGON			
Oregon State University, Corvallis			
Warren, Charles E., Ph.D. Dept. of Fish and Game Mgmt.	Influence of Dissolved Oxygen on Freshwater Fishes	WP-00135-09	$13,097
Warren, Charles E., Ph.D. Dept. of Fish and Game Mgmt.	Ecological Studies of an Experimental Stream	WP-00157-06	28,092
Portland State College, Portland			
Ferguson, James W., Ph.D. Dept. of Chemistry	Water Pollutants Determinable by Gas Chromatography	WP-00063-03	6,470
Johnson, Clyde R., Ph.D. Dept. of Chemistry	Heavy Metal Poisons in Waters and Industrial Wastes	WP-00036-03	6,158
PENNSYLVANIA			
Academy of Natural Sciences Philadelphia			
Patrick, Ruth, Ph.D. Dept. of Limnology	Effect of Specific Chemicals on Diatom Populations	WP-00475-01	_____*
Carnegie Institute of Technology, Pittsburgh			
Bugliarello, George Civil Engineering Dept.	A Synthetic Computer Language For Sanitary Engineering	WP-00415-02	23,154
Drexel Institute of Technology, Philadelphia			
Remson, Irwin, Ph.D. Dept. of Civil Engineering & Mechanics	Research on Underground Movement of Rain Water	WP-00384-02	13,854
Pennsylvania Dept. of Health Harrisburg			
Goodwin, Evan H., B. S. Div. of Sanitary Eng.	Organic Pollutants in Fish and Surface Waters	WP-00214-03	_____*
Pennsylvania State University University Park			
Lovell, Harold L., Ph.D. Dept. of Mineral Preparation	Sewage Effluent Purification by Interface Phenomena	WP-00424-02	18,264
Swarthmore College, Swarthmore			
Mangelsdorf, Paul C., Ph.D. Dept. of Physics	Long Salt-Bridge Methods and Liquid Junctions	WP-00460-02	1,498

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
PENNSYLVANIA (Cont'd.)			
University of Pennsylvania Philadelphia			
Humphrey, Arthur E., Ph.D. Dept. of Chemistry	Bubble Motion and Mass Transfer in Non-Newtonian Fluids	WP-00286-02	_____*
University of Pittsburgh, Pittsburgh			
Cummins, Kenneth W., Ph.D. Dept. of Biology	The Microdistribution of Stream Benthos	WP-00525-01	19,917
Cummins, Kenneth W., Ph.D. Dept. of Biology	The Microdistribution of Stream Benthos (Symposium)	WP-00763-01	1,925
Shapiro, Maurice A., Ph.D. Dept. of Public Health Practices	Determination of Organic Matter in Water	WP-00473-01S1 WP-00473-02	1,920 14,316
RHODE ISLAND			
University of Rhode Island Kingston			
DeLuise, Frank J., M. S. Div. of Engr. Research and Development	Thermodynamics and Kinetics in Anaerobic Digestion	WP-00200-03	_____*
Fish, Charles J., Ph.D. Graduate School of Oceanography	Environmental Relationships of Benthos in Salt Ponds	WP-00023-05	55,665
Sieburth, John M., Ph. D. Graduate School of Oceanography	Production of Pro- and Anti-bacterials by Marine Algae	WP-00100-03	18,365
SOUTH CAROLINA			
Clemson University Clemson			
Andrews, John F., Ph. D. Dept. of Civil Engineering	Growth Characteristics of the Methane Bacteria	WP-00622-01	21,268
University of South Carolina Columbia			
Nelson, Bruce W., Ph. D. Dept. of Geology	Chemical Exchanges Across Sediment-Water Interfaces	WP-00651-01	40,680

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
SOUTH DAKOTA			
South Dakota School of Mines and Tech., Rapid City			
Smith, Ross Wilbert, S. M. Metallurgy Dept.	Adsorption of Surfactants on Selected Minerals	WP-00611-01	$14,716
TENNESSEE			
Vanderbilt University, Nashville			
Bonney, Charles H., B. S. Dept. of Civil Engineering	Determination of Transition Zones in Settling Basins	WP-00039-03	9,840
Krenkel, Peter A., Ph.D. Dept. of Civil Engineering	Turbulent Diffusion and River Waste Assimilative Capacity	WP-00328-03	20,045
TEXAS			
Baylor University, Waco			
Davidson, Floyd F., Ph.D. Dept. of Biology	Toxic Properties of the Blue-green Algae	WP-00002-09	4,752
Lubbock City County Health Dept. Lubbock			
Cowgill, David M., M. D. City Health Dept.	Multipurpose Modification of Playa Sinks	WP-00029-03	38,500
North Texas State University Denton			
Schlichting, Harold E., Ph.D. Dept. of Biology	The Effects of Domestic Pollution Upon Periphyton	WP-00604-01	1,950
University of Texas Austin			
Himmelblau, David M., Ph.D. Dept. of Chemical Engineering	Gas Transport Through Monolayers on Reservoirs	WP-00652-01	13,656
Malina, Joseph F., Jr., Ph.D. Dept. of Civil Engineering	Amino Acid Formation in Anaerobic Sludge Digestion	WP-00083-02	10,434
Parker, Patrick L., Ph.D. Institute of Marine Science	Metabolism of Marine Bays of Texas	WP-00204-04	30,479
UTAH			
University of Utah, Salt Lake City			
Gaufin, Arden R., Ph.D. Dept. of Zoology & Entomology	Production of Taste and Odor Producing Algae in Reservoirs	WP-00334-03	5,196

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
UTAH (Cont'd.)			
University of Utah, Salt Lake City			
Gaufin, Arden R., Ph.D. Dept. of Zoology and Entomology	Bio-assays to Determine the Toxicity of Pesticides to Aquatic Invertebrates	WP-00003-09	$10,435
Rees, Don M., Ph.D. Div. of Biological Sciences	Multipurpose Management Techniques for Reusable Water	WP-00027-03	17,746
Utah State University Logan			
Hansen, Vaughn E., Ph.D. Eng. Experiment Station	Infiltration of Unsteady Open-Channel Fluid Flow	WP-00360-02	____*
VIRGINIA			
Virginia Inst. of Marine Science, Gloucester Point			
Brehmer, Morris L., Ph.D. Pollution-Ecology Section	Effects of Thermal Effluents on Marine Organisms	WP-00092-02	____*
Brehmer, Morris L., Ph.D. Pollution-Ecology Section	Toxicity of Industrial Wastes to Marine Organisms	WP-00035-02	14,400
Virginia Polytechnic Inst. Blacksburg			
Brandt, Warren W., Ph.D. Dept. of Chemistry	Determination of Synthetic Detergents	WP-00647-01	14,982
Murphy, Nelson F., Ph.D. Dept. of Chemical Engr.	Removal of Color from Sulfate Pulp Wash Liquors	WP-00085-01	____*
WASHINGTON			
University of Washington, Seattle			
Banse, Karl., Ph.D. Dept. of Oceanography	Annual Phytoplankton Production in Puget Sound Waters	WP-00633-01 WP-00633-01S1	24,116 11,170
Carlson, Dale A., Ph.D. Dept. of Civil Engineering	Amino Acid Utilization in Activated Sludge	WP-00247-03	13,408
Christman, Russell F., Ph.D. Dept. of Civil Engineering	The Nature of Organic Color in Water	WP-00558-01	15,377
Gessel, Stanley P., Ph.D. Dept. of Forestry	Hydrologic Properties of Forest Humus Types	WP-00051-02	____*

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Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
WASHINGTON			
University of Washington, Seattle			
McCarthy, Joseph L., Ph.D. Dept. of Chemical Engineering	Unique Determination of Lignin Sulfonates in Water	WP-00627-01	$19,096
Nece, Ronald E., Sc.D. Dept. of Civil Engineering	Salt Water Entrainment for Dilution in Sewer Outfalls	WP-00512-01	13,854
Washington State University, Pullman			
Dunstan, Gilbert, M. S. Dept. of Sanitary Engineering	Sphaerotilus Control for Irrigation Water	WP-00150-05	_____*
Hindin, Ervin, M. S. Dept. of Sanitary Engineering	Water Reclamation from Sewage by Solvent Extraction	WP-00040-02	_____*
Hindin, Ervin, M. S. Dept. of Sanitary Engineering	Analysis of Organic Pesticides by Gas Chromatography	WP-00215-03	_____*
Hindin, Ervin, M. S. Dept. of Sanitary Engineering	Water Reclamation by Reverse Osmosis	WP-00624-01	14,689
Hindin, Ervin, M. S. Dept. of Sanitary Engineering	Occurrence of Pesticides in Aquatic Environments	WP-00676-01	32,038
Stokes, J. L., Ph.D. Dept. of Bacteriology & Public Health	The Biology and Chemistry of Sphaerotilus	WP-00239-04	21,026
WEST VIRGINIA			
West Virginia University Morgantown			
Gerencser, Vincent F., Ph.D. Dept. of Microbiology	Studies on Aquatic Stalked Bacteria	WP-00616-01	8,040
Wilson, Harold A., Ph.D. Dept. of Plant Pathology Bacteriology and Entomology	Sewage Decomposition in Acid Mine Drainage Waters	WP-00122-03	_____*
WISCONSIN			
University of Wisconsin Madison			
Fitzgerald, George P., Ph.D. Hydraulic and Sanitary Lab.	Detection of Limiting or Surplus Nutrients in Algae	WP-00297-03	23,038
Hasler, Arthur D., Ph.D. Dept. of Zoology	Vitamin B_{12} in Lakes and Its Ecological Significance	WP-00236-03	11,956

*Active 1964 - Supported by funds awarded 1963

Water Pollution Control / Research Grants / Fiscal Year 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
WISCONSIN			
University of Wisconsin Madison			
Hilsenhoff, William L., Dept. of Entomology	Biological Factors in the Management of Lake Flies	WP-00209-04A1	$23,236
Rohlich, Gerard A., Ph.D. Dept. of Civil Engineering	Glucose Utilization by Pure and Mixed Cultures	WP-00061-03	20,532
Villemonte, James R., Ph.D. Dept. of Civil Engineering	Hydraulic Characteristics of Circular Sedimentation Basins	WP-00183-05	15,840
Weckel, Kenneth G., Ph.D. Dept. of Dairy and Food Industries	Cannery in-plant Waste Losses and Their Control	WP-00535-01A1	18,364
FOREIGN			
AUSTRALIA			
Melbourne Water Science Institute, Melbourne			
Parker, C. D. Director	Function of Solids in Lagoon Treatment of Sewage	WP-00321-02	14,105
CANADA			
British Columbia Research Council, Vancouver			
Walden, Cecil C., Ph.D. Division of Applied Biology	Studies on Acidophilic Chemautotrophic Bacteria	WP-00550-02	19,580
GREAT BRITAIN			
University of Liverpool Great Britain			
Brinkhurst, Ralph O., Ph.D. Dept. of Zoology	Taxonomy and Biology of Tubificidae (Sludge Worms)	WP-00521-01	6,720
JAPAN			
Okayama University, Kurashiki City			
Kobayashi, Jun, D. Sc. Ohara Institute for Agricultural Biology	Strange Osteomalacia by Pollution from Cadmium Mining	WP-00359-02	7,440

WATER POLLUTION CONTROL

RESEARCH FELLOWSHIPS FISCAL YEAR 1964

SUMMARY OF AWARDS BY STATES

State	Institutions Total*	Awarded 1964	Amount 1964
Arizona	1		
California	4	5	$ 37,620
Colorado	2	3	16,000
Georgia	1		189
Idaho	1	1	5,600
Illinois	1	2	10,400
Indiana	1	1	6,000
Iowa	2	8	48,600
Kansas	1	2	11,700
Kentucky	1	1	7,400
Maryland	2	3	17,100
Massachusetts	2	2	13,850
Michigan	3	8	47,900
Missouri	2	3	18,226
New Hampshire	1		
New Mexico	1		
New York	2	4	25,931
North Carolina	1		
Oklahoma	1	4	27,300
Pennsylvania	2	2	10,200
Rhode Island	1	1	10,000
South Carolina	2	3	16,400
Tennessee	1	1	7,000
Texas	1	1	4,800
Utah	2	5	31,949
Virginia	1	2	10,300
Washington	1	3	17,100
Wisconsin	1	8	51,600
Foreign	4	2	18,931

*Total includes all active Research Fellowships, both 1963 and 1964 awards

Active Research Fellowships 1964

28 States, 4 Foreign Countries
46 Instiutions and Agencies
102 Research Fellowships Active

Research Fellowships Awarded 1964

24 States, 2 Foreign Countries
38 Institutions and Agencies
75 Research Fellowships Awarded
$472,096 Amount Awarded

WATER POLLUTION CONTROL

RESEARCH FELLOWSHIPS

FISCAL YEAR 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
ARIZONA			
University of Arizona Tucson			
Dea, Stanley J. Dept. of Civil Engineering	Role of Algae in Oxidation-Reduction Ponds	F1-WP-20,356-01	$_____*
CALIFORNIA			
San Jose State College San Jose			
Falk, Pelley A. Dept. of Civil Engineering	Research Project to be Selected	F1-WP-22,285-01	_____* 500**
Greenlee, Clifford A. Dept. of Civil Engineering	Research Project to be Selected	F1-WP-22,286-01	_____* 500**
Stanford University, Stanford			
Bruch, John C. Dept. of Civil Engineering	Dispersion of Pollutants in Flow Through Porous Media	F1-WP-21,610-02	_____*
Hill, David W. Dept. of Civil Engineering	Biological Removal of Pesticides from Water Supplies	F1-WP-20,280-02	5,500
Linstedt, Kermit D. Dept. of Civil Engineering	Radioactivity Research in Water Supply and Pollution Control	F1-WP-22,084-02	_____*
Stratton, Frank E. Dept. of Civil Engineering	Removal of Nitrogen from Secondary Sewage Plant Effluents	F1-WP-20,354-02	6,100
Tchobanoglous, George Dept. of Civil Engineering	Spray Irrigation as a Means of Effluent Disposal	F1-WP-22,439-01	6,500
University of California, Berkley			
Bruvold, William H. State Dept. of Public Health	Study of Limits for Total Solids in Water	F3-WP-16,452-02	11,520 500**
University of California, Davis			
Carlson, John S. Dept. of Zoology	Effects of Micro-Nutrients on Primary Production Organisms	F1-WP-21,612-02	6,500

*Active 1964 - Supported by funds awarded in 1963
**Supply, Travel or Dependent Allowance

Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
COLORADO			
Colorado State University Fort Collins			
Fair, Jerrell Franklin Dept. of Pathology and Microbiology	Influence of Environmental Factors Upon Water Quality	F1-WP-22,544-01	$ 5,200
Hendricks, Charles Wendell Dept. of Pathology and Microbiology	Strain Variation in Enteric Bacteria Isolated From River Water	F1-WP-22,545-01	5,500
University of Colorado Boulder			
Bryce, George Wilder, Jr. Dept. of Biology	Distribution and Ecology of Colorado Mollusks	F1-WP-24,810-01	5,300
GEORGIA			
University of Georgia, Athens			
Mayberry, William Roy Dept. of Bacteriology	Biodegradable Synthetic Detergents, Insecticides, Herbicides	F1-WP-21,658-01	124**
Todd, Russell Lee Dept. of Bacteriology	Bacterial Decomposition of Detergents in Sewage	F1-WP-21,402-01	65**
IDAHO			
University of Idaho, Moscow			
Smith, Stamford Dennis Dept. of Entomology	Faunal and Ecological Studies on the Trichoptria of Idaho	F1-WP-26,026-01	5,600
ILLINOIS			
University of Illinois Urbana			
Dick, Richard Irwin Dept. of Civil Engineering	Biological Aspects of Water Pollution Control	F1-WP-21,613-01	_____*
Hall, Millard Wayne Dept. of Civil Engineering	Causes and Control of Water Pollution	F1-WP-21,616-01	_____*
Patton, Thomas, H., Jr. Dept. of Sanitary Engineering	Biological Treatment of Wastes	F1-WP-16,460-02	5,200
Pershe, Edward Richard Dept. of Civil Engineering	Research Project to be Selected	F1-WP-21,618-01	_____*

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Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
ILLINOIS (Cont'd.)			
University of Illinois Urbana			
Lefke, Louis W. Dept. of Civil Engineering	Liquifaction of Insoluble Organic Compounds in Anaerobic Digestion	F1-WP-24,562-01	$ 5,200
INDIANA			
Purdue University, Lafayette			
Woodard, Franklin E. Dept. of Sanitary Engineering	Removal of Lignins from Paper Wastes by Coagulation	F1-WP-16,465-02	5,500 500**
IOWA			
Iowa State University, Ames			
Burns, Donald Edward Dept. of Civil Engineering	Removal of Particulate Matter on Coated Filter Media	F1-WP-26,003-01	6,600
Dillingham, James Hugh Dept. of Civil Engineering	Computer Applications in Water Filtration Plant Design	F1-WP-20,084-02	5,500
Fox, Martin D. Dept. of Sanitary Engineering	Sand Filtration Research	F1-WP-23,211-01	5,400
Merideth, Kenneth C. Dept. of Civil Engineering	Research Problem to be Selected	F1-WP-24,554-01	5,400
Merry, Kenneth J. Dept. of Civil Engineering	Research Problem to be Selected	F1-WP-23,003-01	5,800
Stoermer, Eugene F. Dept. of Botany and Plant Pathology	Ecology of Diatoms in Hard Water Habitats	F2-WP-20,477-02	6,500 500**
University of Iowa, Iowa City			
Hendricks, David W. Dept. of Sanitary Engineering	Adsorption, Desorption, and Ion Exchange in Ground Water Flow	F1-WP-24,125-01	6,200
Paulson, Wayne Lee Dept. of Sanitary Engineering	Biological Utilization of Hydrolyzed Cell End-Products	F1-WP-20,353-02	6,700
KANSAS			
University of Kansas Lawrence			
Burkhead, Carl Edward Dept. of Civil Engineering	Energy Relationships in Aerobic Metabolism	F1-WP-21,611-02	6,600

**Supply, Travel or Dependent Allowance

Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
KANSAS (Cont'd.)			
University of Kansas, Lawrence			
Stukenberg, John R. Dept. of Civil Engineering	Radiotracer Studies of Endogenous Metabolism	F1-WP-24,278-01	$5,100
KENTUCKY			
University of Kentucky, Lexington			
Mills, Kermit C. Dept. of Agricultural Engineering	Research in Animal Waste Disposal	F1-WP-22,429-01	7,400
MARYLAND			
Johns Hopkins University Baltimore			
Schubel, Jerry R. Dept. of Oceanography	Research Problem to be Selected	F1-WP-23,785-01	6,100
Warriner, Thomas R. Dept. of Sanitary Engineering	Effects of Sewage Treatment on Survival of Pathogens	F1-WP-16,922-02	4,500
University of Maryland, College Park			
McErlean, Andrew J. Dept. of Zoology	Thermal Pollution Project to be Selected	F1-WP-24,146-01	6,500
MASSACHUSETTS			
Harvard University, Cambridge			
Hernandez, John W. Dept. of Engineering and Applied Physics	Aspects of Biological Flocculation in Waste Water Treatment	F1-WP-14,061-03	5,000
Massachusetts Institute of Technology, Cambridge			
Tenney, Mark W. Dept. of Civil Engineering	Synthesis in Activated Sludge	F1-WP-9,710-04	8,850
MICHIGAN			
Central Michigan University Mt. Pleasant			
Kontio, Arthur L. Dept. of Biology	Toxinomic Key for Chironomida Larvae by Cytologic Distinction of Salivary Glands	F1-WP-23,238-01	4,800

Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
MICHIGAN (Cont'd.)			
Michigan State University East Lansing			
Bahr, Thomas G. Dept. of Fisheries & Wildlife	Effects of Sub-Lethal Pesticide Stress Upon Differential Tissue Destruction in Fish	F1-WP-26,004-01	$ 5,600
Bouck, Gerald Ray Dept. of Fisheries & Wildlife	Investigation of Stress-Induced Changes in Serum Proteins	F1-WP-15,782-03	6,700
Garton, Ronald R. Dept. of Fisheries & Wildlife	Effects of Sub-acute Metallic Ion Pollution on Ecology	F1-WP-26-008-01	5,600
Kullberg, Russell G. Dept. of Botany & Plant Pathology	Factors Affecting Distribution of Algae in Six Thermal Streams of Western Montana	F1-WP-19,590-02	6,200
Linton, Kenneth J. Dept. of Fisheries & Wildlife	Electrophoretic Analysis of Serum Proteins as an Indicator of Pollution	F1-WP-15,866-03	6,700
University of Michigan Ann Arbor			
Echelberger, Franklin, Jr. Dept. of Civil Engineering	Algal Culture Research Applied to Waste Treatment	F1-WP-12,517-03	6,200
Keinath, Thomas M. Dept. of Civil Engineering	Kinetics of Adsorption in Waste Treatment	F1-WP-24,505-01	5,600
Pyper, Gordon R. Dept. of Civil Engineering	Research Problem to be Selected	F1-WP-21,207-01	_____*
Robohn, Walter F. Dept. of Environmental Health	Water Resources Allocation in the Neosho-Grand Basin: Kansas-Oklahoma	F3-WP-16,345-01	500**
MISSOURI			
University of Missouri Columbia			
Hemphill, Louis Dept. of Civil Engineering	Application of Thermal Techniques for Detecting Organic Pollution	F1-WP-26,007-01	6,633
Lind, Owen T. Dept. of Zoology	Productivity Measurements in Lakes Recovering from Acid Pollution	F1-WP-22,892-01	6,000

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Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
MISSOURI (Cont'd.)			
Washington University St. Louis			
Brower, George R. Dept. of Envir. & Sanitary Engineering	Degradation of Organic Pesticides in Water	F1-WP-21,609-02	$ 5,500
Buzzell, James C., Jr. Dept. of Environmental and Sanitary Engineering	Research Problem to be Selected	F1-WP-22,366-01	93**
NEW HAMPSHIRE			
Dartmouth College, Hanover			
Drobney, Neil L. Dept. of Civil Engineering	Sewage Treatment in the Polar Region	F1-WP-21,614-01	_____*
NEW MEXICO			
New Mexico State University, University Park			
O'Brien, Walter J. Dept. of Civil Engineering	Aerobic Treatment and the Biochemical Oxygen Demand Test	F1-WP-22,185-01	_____*
NEW YORK			
Cornell University, Ithaca			
Kirby, William H. Dept. of Sanitary Engineering	Research Problem to be Selected	F1-WP-24,561-01	6,100
Maier, Walter J. Dept. of Sanitary Engineering	Research Problem to be Selected	F1-WP-24,563-01	7,600
Ragan, Robert M. Dept. of Civil Engineering	Influences of Variations in Channels on Runoff in a River Basin	F1-WP-18,983-01A1	_____*
Ward, Charles R. Dept. of Entomology and Limnology	Ecological Changes in Playas Modified for Mutual Benefit of Public Health, Agriculture and Wildlife	F1-WP-15,212-03	5,131
Rensselaer Polytechnic Institute Troy			
Hetling, Leo J. Division of Environmental Engineering	Water-Carried Diseases and Micro-Chemical Toxins	F1-WP-17,439-01A1	_____*

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Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
NEW YORK (Cont'd.)			
Rensselaer Polytechnic Institute Troy			
Stiefel, Robert C. Dept. of Civil Engineering	Oxygen Transfer and Uptake Rates in a Pure Oxygen Environment	F1-WP-24,565-01	$ 7,100
NORTH CAROLINA			
University of North Carolina Chapel Hill			
Gakstatter, Jack H. Dept. of Environmental Science and Engineering	Accumulation in Fish of Insecticides from the Aquatic Environment	5F1-WP-21,673-01	_____*
Henderson, Oliver, Jr. Dept. of Environmental	Organic Productivity of Impounded Waters: Chemical, Physical & Biological Factors	F1-WP-21,608-01	_____*
OKLAHOMA			
Oklahoma State University Stillwater			
Ewing, Margaret J. Dept. of Zoology	Population Dynamics of Littoral Insect Populations in Oil Refinery Effluent Holding Ponds	F1-WP-21,296-02	5,100
Harrel, Richard C. Dept. of Zoology	Crayfish Populations in Streams Receiving Oil Refinery Effluents	F1-WP-23,074-01	7,300
Lunsford, Jesse Dept. of Civil Engineering	Cesium-Strontium Stability in Select Clays in Aqueous Environment	F1-WP-16,458-02	8,200 500**
Wilhm, Jerry L. Dept. of Zoology	Aquatic Invertebrate Populations in a Stream Receiving Oil Refinery Effluents	F1-WP-23,099-01	6,200
PENNSYLVANIA			
Lehigh University Bethlehem			
Coutant, Charles C. Dept. of Biology	Effect of an Artificial Impoundment on the Microbiology of the Interrupted Stream	F1-WP-20,083-02	5,700

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Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
PENNSYLVANIA (Cont'd.)			
Lehigh University Bethlehem			
West-Hertz, Eleanor W. Dept. of Biology	Metabolic and Cellular Changes in Microorganisms and Tissue Culture Due to Cyanides	F1-WP-19,126-02	$ 4,500
Pennsylvania State University University Park			
Harwood, Moyle E. Dept. of Materials Research Laboratory	Relationship of Structure to Properties of Minerals	F3-WP-21,617-01	_____*
RHODE ISLAND			
University of Rhode Island Kingston			
Busser, John H. Dept. of Bio. Oceanography	Physiological Indices of Pollution in Marine Waters	F3-WP-17,280-02	9,500 500**
SOUTH CAROLINA			
Clemson University, Clemson			
Earle, Elias P. Dept. of Chemical Engineering	Research Problem to be Selected	F1-WP-24,431-01	4,900
Kornegay, Billy H. Dept. of Civil Engineering	Biological Waste Treatment Processes	F1-WP-24,560-01	6,600
McClure, Thomas D. Dept. of Civil Engineering	Research Project to be Selected	F1-WP-22,085-01	_____*
University of South Carolina Columbia			
Evett, Jack B. Dept. of Civil Engineering	Evaluation of Waste Assimilation Capacity in a River with Daily Variation in Flow	F1-WP-23,068-01	4,900
Holman, Henry M. Dept. of Civil Engineering	Algae as a Means of Sewage Treatment	F1-WP-22,347-01	_____*

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Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
TENNESSEE			
University of Tennessee, Knoxville			
Bergquist, Eugene T. Dept. of Botany	Ecological and Morphogenetic Studies of Myriophyllum Spicatum in Tennessee Valley Lakes	6F1-WP-21,877-01A1	$ 7,000
TEXAS			
Texas Technological College Lubbock			
Forehand, Charles E. Dept. of Horticulture	Insecticide Use and Effects on Insect Populations, Water Contamination, and Playa Lake Beds	F1-WP-23,235-01	4,800
Ward, Charles Dept. of Horticulture	Ecological Changes in Playas Modified for Mutual Benefit of Public Health, Agriculture, and Wildlife	9F1-WP-15,212-03	_____*
UTAH			
Utah State University Logan			
Hassler, Thomas J. Dept. of Wildlife Resources	Effects of Anionic Detergent on Rainbow Trout	WPPM-13,352(02)	7,200
Hilden, Donald A. Dept. of Wildlife Resources	Interaction of Ca++ and Mg++ on Toxicity of Halides NaF, NaI, NaCl and NaBr on Rainbow Trout	F1-WP-22,891-01	5,000
Nyquist, David Dept. of Wildlife Resources	Eutrophication Trends of Bear Lake (Idaho-Utah) and Effect on Distribution and Biological Productivity of Zooplankton	F1-WP-23,240-01	5,049
University of Utah Salt Lake City			
Knight, Allen W. Dept. of Entomology and Zoology	Ecology of Stoneflies (Plecoptera) of the Gunnison River Drainage	F1-WP-12,746-02	7,200
Warnick, Stephen L. Dept. of Entomology and Zoology	Bioassays to Determine Toxicity of Pesticides to Aquatic Insects	F1-WP-20,175-02	7,500

*Active 1964 - Supported by funds awarded in 1963

Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
VIRGINIA			
Virginia Polytechnic Institute Blacksburg			
Harrison, John Dept. of Civil Engineering	De-watering of Sewage Sludge by Syneresis	F1-WP-21,999-01	_____*
Judkins, Joseph F., Jr. Dept. of Civil Engineering	Effect of Addition of Precipitation Nuclei on Sludge Dewaterability	F1-WP-23,213-01	$ 5,300
Womeldorph, Donald E. Dept. of Statistics	Mathematical Variation of Oxygen, Acids, and Organics, in Relation to Water Pollution	F1-WP-23,900-01	5,000
WASHINGTON			
University of Washington Seattle			
Malmont, Bruce Dept. of Fisheries	Synergistic Effects of Synthetic Detergents and Insecticides on Aquatic Organisms	F1-WP-26,015-01	4,800
Pamatmat, Mario M. Dept. of Oceanography and Friday, Harbor Laboratory	Ecology and Metabolism of an Inter-tidal Sand Flat Bottom Community	F1-WP-23,842-01	6,800
Welch, Eugene B. Dept. of Fisheries	Sublethal Effects of Chlorinated Hydrocarbons Transported by Water Upon Young Salmonids	F1-WP-8,821-02	5,500
WISCONSIN			
University of Wisconsin, Madison			
Carlson, Robert F. Dept. of Civil Engineering	Application of Statistical Hydrology to Water Resource Planning	F1-WP-24,678-01	6,100
Doll, Frederick L. Dept. of Civil Engineering	Research Problem to be Selected	F1-WP-26,009-01	6,100
Fruh, Erwin G. Dept. of Civil Engineering	Comprehensive Study on Eutrophication of Lakes in the Yahara River Basin	F1-WP-16,455-01 F2-WP-16,455-01	4,700 5,000
Mueller, James A. Dept. of Civil Engineering	Phosphate Removal from Waste Water	F1-WP-24,564-01	6,100
Radke, Rodney O. Dept. of Soils	Adsorption of S-triazine Herbicides at Soil Colloidal Surfaces	F1-WP-24,110-01	5,600

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Water Pollution Control / Research Fellowships / Fiscal Year 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
WISCONSIN (Cont'd.)			
University of Wisconsin Madison			
Shannon, James E. Dept. of Civil Engineering	Chemistry of Metals in Natural Waters	F1-WP-26,012-01	$ 6,100
Uttormark, Paul D. Dept. of Civil Engineering	Research Problem to be Selected	F1-WP-24,470-01	6,600
Volk, V. Van Dept. of Soils Science	ABS Adsorption as Related to Sesquioxide, Clay and Organic Matter Content of Soils	F1-WP-24,086-01	5,300
FOREIGN			
ENGLAND			
Ministry of Agriculture, Lowestaft, Suffolk			
Jones, Albert C. Dept. of Fisheries	Population Dynamics of Mixed Species Fisheries	F3-WP-22,546-01	10,583
ISRAEL			
Hebrew University Jerusalem			
Rosen, Milton J. Physical Chemistry	Application of Surface-active Agents to Water Supply Problems	F3-WP-23-055-01	7,348
NETHERLANDS			
Delft Technological University The Netherlands			
Johnson, Robert L. Dept. of International Course in Hydraulic Engineering	Allocation of Water Resources in Densely Populated Areas	F1-WP-20,352-01	_____*
SWITZERLAND			
Swiss Federal Institute of Technology Zurich			
Clersceri, Lenore Dept. of Sanitary Engineering	Mechanism of Denitrification of Sewage Effluents	F2-WP-10,712-01	500**
Clersceri, Nicholas L. Dept. of Sanitary Engineering	Degradation of Condensed Phosphates During Sewage Treatment	F2-WP-10,713-01	500**

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WATER POLLUTION CONTROL

TRAINING GRANTS FISCAL YEAR 1964

SUMMARY OF GRANTS BY STATES

State	Institutions Total	Awarded 1964	Amount 1964
California	3	4	$131,454
Georgia	1	1	28,959
Hawaii	1	1	38,883
Indiana	1	1	15,023
Iowa	1	1	24,577
Kansas	1	1	42,005
Kentucky	1	1	29,356
Maine	1	1	36,001
Maryland	1	1	40,212
Massachusetts	1	1	32,826
Michigan	1	2	117,702
Minnesota	1	1	23,580
Missouri	1	1	31,124
Montana	1	1	42,500
New Jersey	1	1	57,246
New Mexico	1	1	36,859
New York	3	6	278,183
North Carolina	2	2	47,965
Ohio	2	2	69,807
Oklahoma	2	3	93,882
Oregon	1	6	194,677
Pennsylvania	1	1	43,328
South Carolina	1	2	91,391
Tennessee	1	1	50,910
Texas	3	4	100,487
Utah	1	1	28,747
Virginia	1	1	30,332
Washington	1	1	23,165
West Virginia	1	1	33,374
Wisconsin	1	3	201,735

Training Grants Awarded 1964

30 States
39 Institutions and Agencies
54 Training Grants Awarded
$2,016,290 Amount Awarded

WATER POLLUTION CONTROL

TRAINING GRANTS

FISCAL YEAR 1964

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
CALIFORNIA			
San Jose State College San Jose			
Agardy, Franklin J., Ph.D. Dept. of Civil Engineering	Graduate Training in Water Quality Control	ITI-WP-66-01	$ 14,418
Stanford University, Stanford			
Eliassen, Rolf, Ph.D. Dept. of Civil Engineering	Interdisciplinary Management of Water Resources & Water Quality	5TI-WP-38-02 3TI-WP-38-02S1	30,499 24,482
Kruger, Paul, Ph.D. Dept. of Civil Engineering	Use of Radioisotope Techniques in Water Pollution Control	5TI-WP-9-03	38,300
University of California, Davis			
Scott, Verne H., Ph.D. Dept. of Irrigation	Irrigation Effects on Control of Water Pollution	5TI-WP-7-03	23,755
GEORGIA			
Georgia Institute of Technology Atlanta			
Kindsvater, Carl E., Ph.D. School of Civil Engineering	Water Quality and Resources Engineering	ITI-WP-62-01A1	28,959
HAWAII			
University of Hawaii, Honolulu			
Lau, L. S., Ph.D. Dept. of Civil Engineering	Pacific Island Sanitary Engineering	ITI-WP-69-01	38,883
INDIANA			
Purdue University, Lafayette			
Bloodgood, Don E., Ph.D. Dept. of Civil Engineering	Engineering and Design of Water Pollution Control Facilities	5TI-WP-13-03	15,023
IOWA			
Iowa State University, Ames			
Baumann, Robert E., Ph.D. Dept. of Civil Engineering	Chemistry of Waste Treatment Including Nuclear Wastes	5TI-WP-45-02	24,577

Water Pollution Control / Training Grants / Fiscal Year 1964

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
KANSAS			
University of Kansas, Lawrence			
McKinney, Ross E., Sc.D. Dept. of Civil Engineering	Water Research and Training	ITI-WP-50-01	$ 42,005
KENTUCKY			
University of Kentucky Lexington			
Lauderdale, Robert A., Ph.D. Dept. of Civil Engineering	Water Resources and Sanitary Engineering	ITI-WP-64-01	29,356
MAINE			
University of Maine, Orono			
Sproul, Otis J., Sc.D. Dept. of Civil Engineering	Training Program in Water Pollution Microbiology	3TI-WP-17-02S1 5TI-WP-17-03	2,498 33,503
MARYLAND			
Johns Hopkins University Baltimore			
Wolman, Gordon Ph.D. Dept. of Sanitary Engineering and Water Resources	Water Science and Management	ITI-WP-51-01 ITI-WP-51-02	5,300 34,912
MASSACHUSETTS			
Tufts University, Medford			
Hanes, N. Bruce Ph.D. Dept. of Civil Engineering	Water Pollution Control and Public Health Engineering	5TI-WP-40-02	32,826
MICHIGAN			
University of Michigan, Ann Arbor			
Lagler, Karl F., Ph.D. Dept. of Fisheries	Physiological Action of Water Pollutants	5TI-WP-16-03	27,620
Velz, Clarence J., Prof. Dept. of Environmental Health	Training in Water Pollution Control and Public Health	5TI-WP-15-03 3TI-WP-15-03S1	50,122 39,960
MINNESOTA			
University of Minnesota, Minneapolis			
Schroepfer, George J., Ph.D. Dept. of Civil Engineering	Sanitary Engineering and Water Resources Program	5TI-WP-33-02	23,580

Water Pollution Control / Training Grants / Fiscal Year 1964

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
MISSOURI			
University of Missouri Columbia			
Ray, Arliss D., Ph.D. Dept. of Civil Engineering	Water Quality Engineering	ITI-WP-30-01A1	$ 31,124
MONTANA			
Montana State College, Bozeman			
Wright, John C., Ph.D. Dept. of Botany and Bacteriology	Physical and Chemical Aspects of Water Pollution	5TI-WP-1-03	42,500
NEW JERSEY			
Rutgers University New Brunswick			
Heukelekian, Hovhaness Ph.D. Dept. of Sanitation	Water Sanitation	ITI-WP-43-01A1 5TI-WP-43-02	26,550 30,696
NEW MEXICO			
New Mexico State University University Park			
Clark, John W., Ph.D. Dept. of Civil Engineering	Water Resources Planning and Conservation	ITI-WP-48-01 5TI-WP-48-02	16,560 20,299
NEW YORK			
Cornell University, Ithaca			
Gates, Charles D., Ph.D. Dept. of Civil Engineering	Sanitary Engineering and Water Resources Program	5TI-WP-3-03	38,494
Falkson, Louis Ph.D. Dept. of Economics	Training in Economic Aspects of Water Pollution	5TI-WP-4-03	31,926
Lynn, Walter R., Ph.D. School of Engineering	Systems Engineering in Water Pollution Control	5TI-WP-42-02	37,861
Manhattan College, New York			
Eckenfelder, Wesley W., Jr., Ph.D. Dept. of Civil Engineering	Summer Institute in Water Supply and Pollution Control	5TI-WP-32-02 3TI-WP-32-02S1	14,060 6,198
McCabe, Brother Joseph Ph.D. Dept. of Civil Engineering	Training of Professional Specialists in Water Pollution Control	3TI-WP-26-02S1 5TI-WP-26-03	24,565 75,939

Water Pollution Control / Training Grants / Fiscal Year 1964

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
NEW YORK (Continued)			
New York University New York			
Dobbins, William E., Ph.D. Dept. of Civil Engineering	Water Supply and Water Pollution Control Engineering	5TI-WP-24-03	$49,140
NORTH CAROLINA			
North Carolina State, Raleigh			
Smallwood, Charles Jr., Dept. of Civil Engineering	Graduate Training of Water and Waste Treatment Engineers	ITI-WP-68-01A1	12,550
University of North Carolina Chapel Hill			
Weiss, Charles M., Ph.D. Dept. of Environmental Science and Engineering	Training Program in Water Pollution Control Engineering	5TI-WP-6-03	35,415
OHIO			
Ohio State University Columbus			
Dambach, Charles A., Ph.D. Dept. of National Resources Institute	Interdisciplinary Water Resources Training	ITI-WP-39-01A1	32,971
University of Cincinnati Cincinnati			
Eye, J. David Ph.D. Dept. of Civil Engineering	Research Training and the Aquatic Environment	ITI-WP-46-01A1	36,836
OKLAHOMA			
Oklahoma State University Stillwater			
Dorris, Troy C., Ph.D. Dept. of Zoology	Program for Aquatic Biology Specialists in Water Pollution	5TI-WP-23-03 3TI-WP-23-03S1	35,999 10,368
Gaudy, Anthony F., Jr., Ph.D. School of Engineering	Bio-Engineering Training in Water Pollution Control	5TI-WP-19-03	28,512
University of Oklahoma, Norman			
Reid, George W., Prof. Dept. of Sanitary Science and Public Health	Water Resource Development Training Program	5TI-WP-29-02	19,003

Water Pollution Control / Training Grants / Fiscal Year 1964

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
OREGON			
Oregon State University Corvallis			
Burgess, Fred K., Ph.D. Dept. of Civil Engineering	Engineering Control of Waste Water Disposal Training Program	5TI-WP-25-03 3TI-WP-25-03S1	59,174 6,000
Castle, Emery N., Ph.D. Dept. of Agriculture Economics	Water Pollution Economics	ITI-WP-71-01	20,405
Curl, H. C., Ph.D. Dept. of Oceanography	Program for Water Pollution Specialists in Algal Biology	5TI-WP-21-03	15,931
Frolander, Herbert F., Ph.D. Dept. of Oceanography	Biological Oceanography	ITI-WP-61-01	26,630
Osterberg, C. L., Ph.D. Dept. of Oceanography	Marine Radiobiology	ITI-WP-59-01	38,721
Warren, Charles E., Ph.D. Dept. of Fish & Game Management	Freshwater and Marine Pollution Biology Program	5TI-WP-52-02	27,816
PENNSYLVANIA			
University of Pittsburgh Pittsburgh			
Nutt, John M., Ph.D. Dept. of Civil Engineering	Water Resources and Water Pollution Control Engineering	5TI-WP-41-02 3TI-WP-41-02S1	40,328 3,000
SOUTH CAROLINA			
Clemson University, Clemson			
Rich, Linvil G., Ph.D. Dept. of Environmental Engr.	Graduate Program in Process Engineering of Waste Water Treatment	3TI-WP-8-02S1 5TI-WP-8-03 3TI-WP-8-03S1	16,902 42,550 7,139
Rich, Linvil G., Ph.D. Dept. of Environmental Engr.	Summer Institute in Process Engineering of Waste Water Treatment	5TI-WP-5-03	24,800
TENNESSEE			
Vanderbilt University, Nashville			
Krenkel, Peter A., Ph.D. Dept. of Civil Engineering	Sanitary Engineering Training Program	ITI-WP-34-01 5TI-WP-34-02	23,859 27,051
TEXAS			
Texas A & M University College Station			
Davis, William B., Ph.D. Dept. of Sanitary Engineering	Petro-chemical Waste Abatement	ITI-WP-74-01	26,159

Water Pollution Control / Training Grants / Fiscal Year 1964

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
TEXAS (Continued)			
University of Texas, Austin			
Gloyna, Earnest F., Ph.D. Dept. of Civil Engineering	Water Resources and Water Pollution Control Training Program	5TI-WP-20-03	$27,454
William Marsh Rice University, Houston			
Busch, A. W., Ph.D. Dept. of Chemical Engineering	Chemical Engineering Training in Advanced Waste Treatment	5TI-WP-12-03	30,000
Busch, A. W., Ph.D. Dept. of Chemical Engineering	Biological and Engineering Process Design in Water Pollution Control	5TI-WP-44-02	16,874
UTAH			
University of Utah, Salt Lake City			
Gaufin, Arden R., Ph.D. Dept. of Zoology & Entomology	Limnology and Sanitary Biology Aspects of Water Pollution	5TI-WP-54-02	28,747
VIRGINIA			
Virginia Polytechnic Institute Blacksburg			
Parsons, William A., Ph.D. Dept. of Civil Engineering	Graduate Training in Water Pollution Technology	5TI-WP-31-02	30,332
WASHINGTON			
Washington State University Pullman			
Dunstan, Gilbert H., Ph.D. Dept. of Civil Engineering	Water Pollution Control and Waste Water Disposal Engineering	5TI-WP-11-03	23,165
WEST VIRGINIA			
West Virginia University, Morgantown			
Burchinal, Jerry C., Ph.D. Dept. of Civil Engineering	Water Supply and Waste Control	ITI-WP-72-01	33,374

Water Pollution Control / Training Grants / Fiscal Year 1964

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
WISCONSIN			
University of Wisconsin Madison			
Hasler, Arthur D., Ph.D. Dept. of Zoology	Training Program for Aquatic Scientists in Hydrobiology	3TI-WP-2-02S1 5TI-WP-2-03	$44,375 41,500
Lee, G. Fred, Ph.D. Dept. of Civil Engineering	Training Program in Water and Water Pollution Chemistry	5TI-WP-22-03	84,648
Lenz, Arno T., Ph.D. Dept. of Civil Engineering	Water Resources Management	ITI-WP-60-01	31,212

WATER POLLUTION CONTROL

DEMONSTRATION GRANTS FISCAL YEAR 1964

SUMMARY OF GRANTS BY STATES

State	Institutions Total*	Awarded 1964	Amount 1964
California	5	5	$239,995
District of Columbia	2	2	64,725
Florida	1	2	128,200
Massachusetts	1	1	24,107
Michigan	1	1	40,000
Missouri	2	1	16,028
Nebraska	1	1	3,633
New Jersey	1	1	20,000
New York	1	1	4,000
North Dakota	1	1	23,050
Oklahoma	1	1	17,049
Tennessee	1	1	50,000
Washington	1	1	15,016

*Total includes all active Demonstration Grants, both 1963 and 1964 awards

Active Demonstration Grants 1964

13 States
19 Institutions and Agencies
20 Demonstration Grants Active

Demonstration Grants Awarded 1964

13 States
19 Institutions and Agencies
19 Demonstration Grants Awarded
$645,803 Amount Awarded

WATER POLLUTION CONTROL

DEMONSTRATION GRANTS

FISCAL YEAR 1964

LOCATION & PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
CALIFORNIA			
Engineering-Science, Inc. Oakland			
Ludwig, Harvey F., M. S. President	Improved Waste Treatment Design of Submarine Disposal	WPD 12-02-64	33,037
Los Angeles County Los Angeles			
Lambie, John A., M. S. County Engineer	Waste Water Reclamation Project for Antelope Valley	WPD 50-01(R1)-64	45,000
Strandberg, Carl H., Individual Freemont	Aerial Water Quality Reconnaissance Demonstration	WPD 20-02-64 WPD 20-02S1-64	2,000 7,375
Stanford University, Stanford			
Eliassen, Rolf Ph.D. Dept. of Civil Engineering	Reclamation of Re-usable Water from Sewage	WPD 21-02-64	32,583
University of Southern California, Los Angeles			
Chambers, Leslie A., Ph.D. Allan Hancock Foundation	Feasibility of Waste Disposal in the Marine Environment	WPD 1-03-64	120,000
DISTRICT OF COLUMBIA			
League of Women Voters Education Fund, Washington			
Whittemore, Arthur E., (Mrs.) Trustee, In Charge of Educational Projects on Water Resources	Schools for Citizens on Land and Water Use for Tomorrow's Living	WPD 62-01-64	24,725
National Association of Counties Research Foundation, Washington			
Hillenbrand, Bernard F. Executive Director	Public Officials Water Pollution Control Demonstration Project	WPD 55-01-64	40,000

Water Pollution Control / Demonstration Grants / Fiscal Year 1964

LOCATION AND PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
FLORIDA			
University of Florida Gainesville			
Black, A. P., Ph.D. Dept. of Chemistry	A Study of Estuarine Pollution Problems	WPD 19-02-64	50,000
Kiker, John E., Jr., Ph.D. Dept. of Civil Engineering	A Study of Estuarine Water Pollution Problems	WPD 15-03-64	78,200
MASSACHUSETTS			
Massachusetts Health Research Institute Inc., Boston			
Tompkins, William A. Division of Fisheries and Game Field Headquarters	Massachusetts Pesticide Study	WPD 25-02S1-64 WPD 25-03-64	9,214 14,893
MICHIGAN			
University of Michigan, Ann Arbor			
Vaughan, Henry F., Ph.D. National Sanitation Foundation Michigan School of Public Health	Detroit Metropolitan Environmental Study	WPD 5-03-64	40,000
MISSOURI			
Washington University, St. Louis			
Ryckman, D. W., Ph.D. Dept. of Environmental Engineering	Improved Technique for Recovery of Trace Organic Pollutants	WPD 24-02-63 WPD 24-02S1-64	* 3,450
Water and Sewerage Technical School, Neosho			
Caughran, Lloyd Director	Water and Sewerage Technical School Demonstration Project	WPD 2-03-64	12,578
NEBRASKA			
University of Nebraska, Lincoln			
Engelhard, Warren E., Ph.D. Dept. of Microbiology	Effect of Microbial Flora on Resins in Water Softening and on Water Pollution	WPD 72-01-64	3,633

*Active 1964 - Supported by funds awarded in 1963.

Water Pollution Control / Demonstration Grants / Fiscal Year 1964

LOCATION & PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
NEW JERSEY			
Division of Fish and Game Lebanon			
Pyle, A. Bruce Principal Fisheries Biologist Bureau of Fisheries Laboratory	Fish and Game Unit Team for Evaluation of Pollution	WPD 4-03-64	20,000
NEW YORK			
County of Westchester White Plains			
Brown, James M. Dept. of Public Works	Application of Polymers to Dewatering and Thickening of Sewage Solids	WPD 47-01-64	4,000
NORTH DAKOTA			
North Dakota State Health Department, Bismarck			
Van Heuvelen, Willis Environmental Health and Engineering Services	Potato Processing and Domestic Wastes Treatment by Mechanical Aeration	WPD-9-02S1-64 WPD 9-03-64	9,100 13,950
OKLAHOMA			
University of Oklahoma Norman			
Reid, George W., Prof. Dept. of Sanitary Science and Public Health	Removal of Nitrogen and Phosphorus by Bio-Oxidation Ponds	WPD 7-02-64	17,049
TENNESSEE			
Tennessee Game and Fish Commission, Nashville			
Stubbs, John M. Supervisor, Pollution Control & Warmwater Streams	Development of Fish Protection Surveillance Systems	WPD 3-03-64	50,000
WASHINGTON			
University of Washington Seattle			
Sylvester, Robert O., Ph.D. Dept. of Civil Engineering	Influence of Site Preparation on Quality of Impounded Water	WPD 6-03-64	15,016

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